Message

From: Fennessy, Christopher [christopher.fennessy@Rocket.com]
Sent: 2/22/2019 5:01:40 PM
To: ROJAS-MICKELSON, DAEWON [rojas-mickelson.daewon@epa.gov]; Keller, Lynn [Keller.Lynn@epa.gov]; 'Myers, Perry@DTSC' [Perry.Myers@dtsc.ca.gov]
Subject: FW: [EXTERNAL] Evaluation of Volatile Attenuation Glenborough
Attachments: cdasvDATA.xlsx

Christopher M. Fennessy, P.E.
Aerojet Rocketdyne, Inc.
Engineering Manager, Site Remediation
PO Box 13222
Sacramento, California 95813-6000
Ph: 916-355-3341
Fax: 916-355-6145
Email: Christopher.Fennessy@Rocket.com

From: MacDonald, Alex@Waterboards [mailto:Alex.MacDonald@waterboards.ca.gov]
Sent: Friday, February 22, 2019 8:17 AM
To: Fennessy, Christopher; Hanley, Valerie@DTSC; Rohrer, Jim@DTSC
Subject: [EXTERNAL] Evaluation of Volatile Attenuation Glenborough

All: I performed the evaluation we discussed during our call on Tuesday. It took a bit longer than anticipated. I looked at several things – the data from the J&E study performed by Aerojet on several areas, including a specific one for the Central Disposal Area, the data from Chris' work looking at groundwater and soil vapor in the Glenborough Phase 1 area and running the J&E model using the soil types in the boring logs from Chris' effort and the specific soil type parameters provided in the J&E evaluation.

Attached is a spreadsheet with bunch of numbers. The first group of data provides a majority of the points evaluated in the J&E evaluation with depth to groundwater, groundwater concentration, depth to soil vapor sample and soil vapor concentration. I then did the simple calculation for providing a factor to multiply the groundwater concentration by to get the soil vapor number (units did not matter). I then took that value and multiplied it by the ratio of depth to groundwater values for the J&E points and the minimum depth to groundwater for the Glenborough Phase 1 area (40 feet). The values had a wide range and one needed to look at the original work to see that some points should be eliminated due to proximity to potential vadose zone sources or the factor could not be calculated for one reason or another (plus some other issues). So looking at the results, I selected a conservative value of 1 as nearly all of the factors fell below that. That would lead to a 16 µg/L in groundwater at the trigger for next action.

I performed the same task on Chris' work and the values would raise to 25 ĺg/L in groundwater.

Running the J&E model with various soil types and parameters, I came up with a value of 12 µg/L in groundwater which would result in a soil vapor concentration at the sub slab location of 15 µg/m3 It was interesting how the value did not change that much with a change in soil types, but using the parameters from the Central Disposal Area.

One thing, calculated attenuation could be greater in many instances but the value in the vadose zone was ND – and I used the detection limit as the value in soil vapor. The actual value could be lower and it is not known that a higher concentration in groundwater would also be attenuated to ND.

The last column supplies the value in groundwater that would provide 16 µ/m3 at the sub slab location.

We can discuss in our call today.

Sorry for not giving you much time ahead of the call, but it took longer than anticipated.

Alex